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RENAL DYSFUNCTION IS ASSOCIATED WITH THE PROGRESSION OF PRECLINICAL DIASTOLIC DYSFUNCTION (STAGE B) TO SYMPTOMATIC HEART FAILURE (STAGE C): A POPULATION-BASED STUDY

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Tuesday, April 05, 2011, 9:30 a.m.-10:45 a.m.

Session Title: Mechanisms of Heart Failure with Preserved Ejection Fraction
Abstract Category: 24. Myocardial Function/Heart Failure—Clinical Nonpharmacological Treatment
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Background: Preclinical Diastolic Dysfunction (PDD) has been broadly defined as subjects with left ventricular diastolic dysfunction, without the diagnosis of congestive heart failure (HF), and with normal systolic function. Renal function is an important prognostic marker in patients with symptomatic HF. However, the prognostic value of renal function in PDD remains poorly defined. Our objective was to determine the risk factors associated with the progression from PDD to symptomatic HF.

Methods: Using the resources of the Rochester Epidemiology Project, all residents of Olmsted County, MN who underwent echocardiography between 1/1/2004 and 12/31/2005 and had Grade 2-4 diastolic dysfunction (DD) and EF ≥ 50% were identified. Patients with a diagnosis of HF or atrial fibrillation prior to and within 30 days of the echocardiogram were excluded.

Results: A total of 388 patients met the inclusion criteria. The mean age of the cohort was 67 ± 12 years with a female (57%) predominance. Prevalence of renal insufficiency (estimated GFR <60ml/min/1.73 m2) was 34%. The 3-year cumulative probabilities of development of (Stage C) HF, cardiac hospitalization, development of atrial fibrillation, and mortality were 11.6%, 6.2%, 14.5%, and 10.1% respectively. Using Cox's proportional hazard modeling we determined that for every 1 unit increase in the plasma Creatinine, the hazard of developing HF increases by 26% (HR=1.26, 95% CI=1.08-1.47; p=0.0039). In multivariable Cox's proportional hazard regression analysis we determined that renal dysfunction was associated with the subsequent development of HF after adjustment for age, sex, body mass index, hypertension, coronary disease, ejection fraction, left atrial volume, and deceleration time (HR=2.0, 95% CI=1.1-3.6; p=0.019).

Conclusion: This population-based study demonstrated that in PDD, there was a moderate degree of progression to development of HF over 3 years and renal dysfunction was associated with increased risk of progression to symptomatic HF.